

Atty. Dkt. No. 040268-0161

This listing of claims will replace the listing of claims in the response of July 14, 2003.

Listing of Claims:

Claims 1-61 (Canceled)

Claim 62 (New): A stable, soluble calcium phosphate complex that is obtainable by a process comprising the steps of:

- (i) obtaining an solution of a phosphopeptide, wherein the phosphopeptide includes amino acid sequence Ser(P)-Ser(P)-Ser(P)-Glu-Glu (SEQ ID NO: 5);
- (ii) admixing, under alkaline conditions, the solution of step (i) with calcium ions and inorganic phosphate, to obtain a mixture; and
- (iii) isolating, under alkaline conditions, the complex from the mixture of step (ii).

Claim 63 (New): The complex of claim 62, wherein the alkaline conditions are pH of about 9.

Claim 64 (New): The complex of claim 62, wherein the amino acid sequence is selected from the group consisting of:

(SEQ ID NO: 1)      Gln<sup>59</sup>-Met-Glu-Ala-Glu-Ser(P)-Ile-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ile-Val-Pro-Asn-Ser(P)-Val-Glu-Gln-Lys<sup>79</sup>  
 $\alpha_{s1}(59-79)$ ;

Atty. Dkt. No. 040268-0161

(SEQ ID NO: 2) Arg<sup>1</sup>-Glu-Leu-Glu-Glu-Leu-Asn-Val-Pro-Gly-Glu-Ile-Val-Glu-Ser(P)-Leu-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ser-Ile-Thr-Arg<sup>25</sup>  $\beta$ (1-25);

(SEQ ID NO: 3) Asn<sup>46</sup>-Ala-Asn-Glu-Glu-Glu-Tyr-Ser-Ile-Gly-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ser(P)-Ala-Glu-Val-Ala-Thr-Glu-Glu-Val-Lys<sup>70</sup>  $\alpha_2$ (46-70); and

(SEQ ID NO: 4) Lys<sup>1</sup>-Asn-Thr-Met-Glu-His-Val-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ser-Ile-Ile-Ser(P)-Gln-Glu-Thr-Tyr-Lys<sup>21</sup>  $\alpha_2$ (1-21).

Claim 65 (New): The complex of claim 64, wherein the amino acid sequence is:

(SEQ ID NO: 1) Gln<sup>59</sup>-Met-Glu-Ala-Glu-Ser(P)-Ile-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ile-Val-Pro-Asn-Ser(P)-Val-Glu-Gln-Lys<sup>79</sup>  $\alpha_{s1}$ (59-79).

Claim 66 (New): A stable, soluble calcium fluoride phosphate complex that is obtainable by a process comprising the steps of:

- (i) obtaining a solution of a phosphopeptide, wherein the phosphopeptide includes amino acid sequence Ser(P)-Ser(P)-Ser(P)-Glu-Glu (SEQ ID NO: 5);
- (ii) admixing, under alkaline conditions, the solution of step (i) with calcium ions, inorganic phosphate and fluoride ions, to obtain a mixture; and
- (iii) isolating the complex from the mixture of step (ii).

Claim 67 (New): The complex of claim 66, wherein the alkaline conditions are pH of about 9.

Atty. Dkt. No. 040268-0161

Claim 68 (New): The complex of claim 66, wherein the amino acid sequence is selected from the group consisting of:

- (SEQ ID NO: 1)      Gln<sup>59</sup>-Met-Glu-Ala-Glu-Ser(P)-Ile-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ile-Val-Pro-Asn-Ser(P)-Val-Glu-Gln-Lys<sup>79</sup>  
 $\alpha_{s1}(59-79)$ ;
- (SEQ ID NO: 2)      Arg<sup>1</sup>-Glu-Leu-Glu-Glu-Leu-Asn-Val-Pro-Gly-Glu-Ile-Val-Glu-Ser(P)-Leu-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ser-Ile-Thr-Arg<sup>25</sup>  $\beta(1-25)$ ;
- (SEQ ID NO: 3)      Asn<sup>46</sup>-Ala-Asn-Glu-Glu-Glu-Tyr-Ser-Ile-Gly-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ser(P)-Ala-Glu-Val-Ala-Thr-Glu-Glu-Val-Lys<sup>70</sup>  $\alpha_{s2}(46-70)$ ; and
- (SEQ ID NO: 4)      Lys<sup>1</sup>-Asn-Thr-Met-Glu-His-Val-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ser-Ile-Ile-Ser(P)-Gln-Glu-Thr-Tyr-Lys<sup>21</sup>  $\alpha_{s2}(1-21)$ .

Claim 69 (New): The complex of claim 68, wherein the amino acid sequence is:

- (SEQ ID NO: 1):      Gln<sup>59</sup>-Met-Glu-Ala-Glu-Ser(P)-Ile-Ser(P)-Ser(P)-Ser(P)-Glu-Glu-Ile-Val-Pro-Asn-Ser(P)-Val-Glu-Gln-Lys<sup>79</sup>  
 $\alpha_{s1}(59-79)$ .

Claim 70 (New): A method of preparing a stable, soluble calcium phosphate complex comprising the steps of:

- (i) obtaining a solution of a phosphopeptide, wherein the phosphopeptide includes amino acid sequence Ser(P)-Ser(P)-Ser(P)-Glu-Glu (SEQ ID NO: 5);

Atty. Dkt. No. 040268-0161

- (ii) admixing the solution of step (i) with calcium ions and inorganic phosphate at a pH of above 7, to obtain a mixture;
- (iii) filtering the mixture of step (ii) to produce a retentate, and drying the retentate to isolate the complex.

Claim 71 (New): The method of claim 70, wherein step (ii) further comprises admixing the solution of step (i) with fluoride ions in addition to the calcium ions and inorganic phosphate.

Claim 72 (New): A stable, soluble calcium phosphate complex that is obtainable by the process of claim 70.

Claim 73 (New): A stable, soluble calcium phosphate complex that is obtainable by the process of claim 71.

Claim 74 (New): A method of treating or inhibiting dental caries or tooth decay, comprising administering a complex according to claim 62, 66, 72 or 73 to the teeth or gums of a subject in need of such treatment.

Claim 75 (New): A pharmaceutical composition comprising:

- (i) a complex of claim 62 or 67; and
- (ii) a pharmaceutical carrier or a delivery vehicle that does not substantially adversely affect the activity of the complex.

Atty. Dkt. No. 040268-0161

Claim 76 (New): The pharmaceutical composition of claim 75, wherein the complex is present in an effective amount for remineralising teeth or for inhibiting cariogenesis or tooth decay in a subject.

Claim 77 (New): The pharmaceutical composition of claim 75, wherein the complex is present in an effective amount for promoting calcium absorption in a subject suffering from a condition related to calcium loss, calcium deficiency or calcium malabsorption.

Claim 78 (New): The pharmaceutical composition of claim 77, wherein the condition is osteoporosis or osteomalacia.

Claim 79 (New): The pharmaceutical composition of claim 75, further comprising foodstuff.

Claim 80 (New): The pharmaceutical composition of claim 79, wherein the foodstuff is a dairy product.

Claim 81 (New): The pharmaceutical composition of claim 75, further comprising a dentifrice.

Claim 82 (New): The pharmaceutical composition of claim 81, wherein the dentifrice is selected from the group consisting of toothpaste, toothpowder, liquid dentifrice, mouthwash, troche, chewing gum, dental paste, gingival massage cream and gargle tablet.

Atty. Dkt. No. 040268-0161

Claim 83 (New): A method for remineralising teeth or for inhibiting cariogenesis or tooth decay, comprising administering an effective amount of a complex of claim 62, 66, 72 or 73 to a subject in need thereof.

Claim 84 (New): A method for promoting calcium absorption in a subject suffering from a condition related to calcium loss, calcium deficiency or calcium malabsorption, comprising administering an effective amount of a complex of claim 62, 66, 72 or 73 to the subject.

Claim 85 (New): The method of claim 84, wherein the condition is osteoporosis or osteomalacia.

Claim 86 (New) The pharmaceutical composition of claim 75, wherein the delivery vehicle is adapted to co-localize calcium and phosphate ions of the complex at a target site.

Claim 87 (New) The pharmaceutical composition of claim 86, wherein the delivery vehicle is selected from the group consisting of toothpaste, toothpowder, liquid dentifrice, mouthwash, troche, chewing gum, dental paste, gingival massage cream, gargle tablet and foodstuff.

Claim 88 (New) The pharmaceutical composition of claim 87, wherein the foodstuff is a dairy product.